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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,477	01/06/2004	Dong Jae You	041993-5363	3545

9629 7590 02/04/2010

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EXAMINER	
CHEN, WEN YING PATTY	
ART UNIT	PAPER NUMBER
2871	
MAIL DATE	DELIVERY MODE
02/04/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/751,477	YOU, DONG JAE	
	Examiner	Art Unit	
	WEN-YING PATTY CHEN	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9,11-15 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,11-15 and 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/04/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Jan. 20, 2010 has been entered.

Response to Amendment

Applicant's amendment filed on Jan. 20, 2010 has been entered. Claims 21-23 are cancelled, therefore, claims 1, 2, 4-9, 11-15 and 17-20 remain pending in the current application.

Claim Objections

Claim 10 is objected to because of the following informalities: Line 6 recites the limitation of "the fluorescent lamp", which lacks antecedent basis. For examination purposes, the limitation will be treated as to recite, "a fluorescent lamp". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 11 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawakami (US 7160019).

With respect to claim 1 (Amended): Kawakami discloses in Figures 1-5 a liquid crystal display device, comprising:

a liquid crystal display panel (element 200);

a backlight unit (element 100) having a light guide plate (element 30), a fluorescent lamp (element 40), a reflection sheet (element 52) substantially enclosing an outer side of the fluorescent lamp except for a light exit portion to reflect light emitted from the fluorescent lamp (as shown), and a bottom cover (element 12) having an end portion (element 16) with a shape that substantially follows a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet (as shown);

at least one optical sheet (element 70) positioned along an upper surface of the light guide plate and overlapping an end portion of the reflection sheet (element 520c) by an overlap amount (as shown),

wherein the end portion of the bottom cover (element 16) is positioned to leave a predetermined interval from the light guide plate and the optical sheet to simplify assembly of the light guide plate and the end portion of the reflection sheet overlaps a portion of the light guide plate by the overlap amount (as shown),

wherein the end portion of the bottom cover substantially contacts all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount (as shown); and

a chassis (element 300) supporting and affixing the liquid crystal display panel and the backlight unit.

With respect to claim 11 (Amended): Kawakami discloses in Figures 1-5 a backlight unit, comprising:

a panel-type light guide plate (element 30) having a light projection plane and a light incident plane;

a reflection plate (element 20) along a rear side of the light guide plate;

a lamp at the light incident plane of the light guide plate, the lamp assembly including a fluorescent lamp (element 40) and a reflection sheet (element 52) at an outer side of the fluorescent lamp;

at least one optical sheet (element 70) over the light projection plane of the light guide plate and overlapping an end portion of the reflection sheet (element 520c) by an overlap amount (as shown); and

a bottom cover (element 12) extending from a rear side of the reflection plate to an outer side of the reflection sheet such that an end portion of the bottom cover extends to the outer side of the reflection sheet substantially following a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet (as shown),

wherein the end portion of the bottom cover (element 16) is positioned to leave a predetermined interval from the light guide plate and the end portion of the reflection sheet overlaps a portion of the light guide plate by the overlap amount (as shown),

wherein the end portion of the bottom cover substantially contacts all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount (as shown).

With respect to claim 18 (Amended): Kawakami discloses in Figures 1-5 a backlight unit for a liquid crystal display device, comprising:

a light guide plate (element 30);

a reflection plate (element 20) along a rear side of the light guide plate;

a fluorescent lamp (element 40) along an outer periphery of the light guide plate;

a reflection sheet (element 52) substantially enclosing the fluorescent lamp along the outer periphery of the light guide plate to reflect light from the fluorescent lamp to the light guide plate;

at least one optical sheet (element 70) positioned along an upper surface of the light guide plate and overlapping an end portion of the reflection sheet (element 520c) by an overlap amount (as shown); and

a bottom cover (element 12) along a rear side of the reflection plate having an end portion (element 16) with a shape that substantially follows a contour of the reflection sheet to substantially surround and encase the reflection sheet and to support and affix the reflection sheet (as shown),

wherein the end portion of the bottom cover (element 16) is positioned to leave a predetermined interval from the light guide plate and the end portion of the reflection sheet overlaps a portion of the light guide plate by the overlap amount (as shown),

wherein the end portion of the bottom cover substantially contacts all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount (as shown).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) in view of Lee (US 2003/0223020).

Kawakami discloses all of the limitations set forth in claim 1, and further disclose in Figure 1-5 that the backlight unit further comprises:

a panel-type light guide plate (element 30) having a light projection plane and a light incident plane;

a reflection plate (element 20) along a rear side of the light guide plate; and

a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 40) and the reflection sheet (element 52) at an outer side of the fluorescent lamp.

Kawakami does not disclose a rectangular mold frame.

However, Lee discloses in Figures 31 and 32 of a backlight unit comprising a mold frame (element 500) for receiving the reflection plate, the light guide plate, the optical sheet, and the lamp assembly therein, wherein a bottom cover extends from a bottom of the mold frame.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Kawakami wherein the backlight unit of the display device comprises a mold frame as taught by Lee, since Lee teaches that by providing the mold frame allows the backlight assembly to be securely attached to the chassis.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019).

Kawakami discloses all of the limitations set forth in claim 1, but is silent regarding the predetermined interval of the distance between the end portion of the bottom cover from the light guide plate and the optical sheet being within a range of about 0.1mm to about 50mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).*

Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) in view of Shiotani et al. (JP 2001-338512).

With respect to claim 5 (Amended): Kawakami discloses all of the limitations set forth in the previous claims, but does not specifically disclose that the overlap amount of the overlapping the end portion of the reflection sheet with the light guide plate is within a range of about 0.2mm to about 30mm.

However, Shiotani teaches in Figure 3 a reflection sheet (element 8) overlapping a light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Kawakami wherein the first overlapping amount is as taught by Shiotani, since Shiotani teaches that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

With respect to claim 17 (Amended): Kawakami discloses all of the limitations set forth in claim 1, but is silent regarding the predetermined interval of the distance between the end

portion of the bottom cover from the light guide plate and the optical sheet being within a range of about 0.1mm to about 50mm and that the overlap amount of the overlapping the end portion of the reflection sheet with the light guide plate is within a range of about 0.2mm to about 30mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).* Further, Shiotani teaches in Figure 3 a reflection sheet (element 8) overlapping a light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Kawakami wherein the first overlapping amount is as taught by Shiotani, since Shiotani teaches that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

Claims 6, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) in view of Nakano (US 2003/0053008).

Kawakami discloses all of the limitations of the liquid crystal display device set forth in the previous claims, but does not disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexibility and Ti.

However, Nakano discloses in Paragraph 0034 and 36 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin selected from the group consisting of ABS, PET, PVC and a non-metallic substance, which includes one of a polymer having a high reflexibility and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Kawakami with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexibility and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) and Lee (US 2003/0223020) in view of Matsuda et al. (US 2002/0167626).

Kawakami and Lee disclose all of the limitations set forth in the previous claims but do not disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Kawakami and Lee, so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) in view of Beiswenger et al. (US 4958911).

Kawakami discloses all of the limitations set forth in the previous claims but does not disclose that the reflection sheet and the end portion of the bottom cover has a round shape.

However, Beiswenger et al. teaches in Figure 2 of forming a lamp reflection sheet (element 45) and an end portion of a bottom cover (element 24) in a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Kawakami wherein the reflection sheet and the end portion of the bottom cover has a round shape as taught by Beiswenger et al., since Beiswenger et al. teaches that the curved corners helps to enhance the reflectance of the light thus improve the brightness of the illuminated light (Column 2, lines 39-60).

Claims 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) in view of Matsuda et al. (US 2002/0167626).

Kawakami discloses all of the limitations set forth in the previous claims but does not disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Kawakami, so that the thickness of the LCD

device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 7160019) in view of Itoh et al. (US 2001/0053073).

Kawakami discloses all of the limitations set forth in claim 18, but does not disclose that a first end portion of the reflection sheet overlaps a portion of the reflection plate.

However, Itoh teaches in Figure 1 of overlapping an end portion of a reflection sheet (element 2) with a portion of the reflection plate (element 4a).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a backlight unit as taught by Kawakami wherein an end portion of the reflection sheet overlaps a portion of the reflection plate as taught by Itoh, since Itoh teaches that such structure helps to reduce abnormal light emittance at the vicinity of the lamp (Paragraph 0029).

Response to Arguments

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN-YING PATTY CHEN whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W. PATTY CHEN
Examiner
Art Unit 2871

/W. PATTY CHEN/
Examiner, Art Unit 2871